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Functional observer design using linear matrix inequalities

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Abstract

© 2016, Allerton Press, Inc.It is shown that the problem of observer design for estimating a set of linear combinations of state variables of a plant can be formulated in terms of linear matrix inequalities. An algorithm for constructing functional observers is proposed based on a nonsingular transformation of a plant model in the state space by matrix canonization with subsequent solution of the system of linear matrix inequalities.

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Keywords

design algorithm, estimation, functional observer, linear matrix inequalities, matrix canonization